

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)
2. (Previously Presented) A process according to claim 8, wherein said etching medium is a paste which comprises
 - a. at least one solvent
 - b. thickeners and optionally
 - c. an additive that is a thixotropic agent, a flow-control agent, a deaerator or an adhesion promoter,and wherein said medium is effective at temperatures from 70 to 150°C or can be activated by the input of energy and said etching paste is printable.
3. (Cancelled)
4. **(Currently Amended)** A process according to claim 8, wherein said etching component is ~~sodium hydroxide, potassium hydroxide, ammonia, ethanolamine, ethylenediamine, tetraalkylammonium hydroxide or one of the ethylenediamine/ pyrocatechol or ethanolamine/gallic acid mixtures.~~
5. (Cancelled)
6. (Previously presented) A process according to Claim 2, wherein said thickener is hydroxyalkylguar, xanthan gum, and/or ethyl hydroxypropyl or hydroxyethylcellulose, sodium carboxymethylhydroxyethylcellulose, homopolymers or copolymers based on functionalised vinyl units of acrylic acid, acrylates or alkyl methacrylates (C₁₀-C₃₀), individually or in a mixture in an amount of from 0.5 to 25% by weight, based on the total amount of the etching medium.

7. (Previously presented) A process according to Claim 2, wherein said additive is a thixotropic agent, a flow-control agent, a deaerator or an adhesion promoter in an amount of from 0 to 2% by weight, based on the total amount.

8. **(Currently Amended)** A process for the selective etching of silicon surfaces and layers to a depth of 1-3 μm , comprising applying a printable thickened, alkaline liquid etching medium over the entire surface area of said surface or layer or in accordance with an etch structure mask specifically only to the areas of the surface where etching is desired

and removing said medium after an exposure time of from 30 s to 5 min.

wherein said etching medium is activated by the input of energy

and wherein said etching medium comprises

(a) an etching component ~~comprising that is an organic or inorganic sodium hydroxide, potassium hydroxide, ammonia, ethanolamine, ethylenediamine, tetraalkylammonium hydroxide or one of the ethylenediamine/ pyrocatechol or ethanolamine/gallic acid mixtures~~ having a concentration of from 5 to 48% by weight, based on the total amount of said etching medium

and

(b) from 10-90 % by weight, based on the total amount of said etching medium, of a solvent which is a mixture of water and at least one other solvent that is diethylene glycol, dipropylene glycol, polyethylene glycols, 1,2-propanediol, 1,4-butanediol, 1,3-butanediol, glycerol, 1,5-pentanediol, 2-ethyl-1-hexanol, acetophenone, methyl-2-hexanone, 2-octanone, 4-hydroxy-4-methyl-2-pentanone, 1-methyl-2-pyrrolidone, ethylene glycol monobutyl ether, ethylene glycol monomethyl ether, triethylene glycol monomethyl ether, diethylene glycol monobutyl ether, dipropylene glycol monomethyl ether, or a carboxylic acid ester

wherein said etching medium selectively etches said silicon surface or layer to a depth of 1-3 μm .

9. (Cancelled)

10. (Previously presented) A process according to Claim 8, wherein said etching medium is activated by exposure to heat.

11. (Previously presented) A process according to Claim 8, wherein said etching medium is applied to the surface to be etched by template, pad, stamp, ink-jet or manual printing process or by a dispensing technique.

12. (Previously presented) A process according to Claim 8, wherein said etching medium is rinsed off using a solvent or solvent mixture when the etching is complete.

13. (Cancelled)

14. **(Currently amended)** A method for the selective etching of silicon surfaces and layers for isolation of the pn transition in solar cells comprising applying a printable thickened, alkaline liquid etching medium to the surface of said silicon or a layer for isolation of the pn transition in a solar cell

and

wherein said etching medium comprises

(a) an etching component comprising that is an organic or inorganic sodium hydroxide, potassium hydroxide, ammonia, ethanolamine, ethylenediamine, tetraalkylammonium hydroxide or one of the ethylenediamine/ pyrocatechol or ethanolamine/gallic acid mixtures having a concentration of from 5 to 48% by weight, based on the total amount of said etching medium

and

(b) from 10-90 % by weight, based on the total amount of said etching medium, of a solvent which is a mixture of water and at least one other solvent that is diethylene glycol, dipropylene glycol, polyethylene glycols, 1,2-propanediol, 1,4-butanediol, 1,3-butanediol, glycerol, 1,5 pentanediol, 2-ethyl-1-hexanol, acetophenone, methyl-2-hexanone, 2-octanone, 4-hydroxy-4-methyl-2-pentanone, 1-methyl-2-pyrrolidone, ethylene glycol monobutyl ether, ethylene glycol monomethyl ether, triethylene glycol monomethyl ether, diethylene glycol monobutyl ether, dipropylene glycol monomethyl ether, or a carboxylic acid ester

wherein said etching medium selectively etches said silicon surface or layer for isolation of the pn transition in of a solar cell to a depth of 1-3 μm .

15. **(Cancelled)**

16. **(Cancelled)**

17. (Withdrawn-Previously presented) A method for etching of silicon surfaces and layers in a process for the production of semiconductor components and circuits thereof comprising applying an etching medium according to claim 8 to the surface of said silicon or layer in a process for the production of a semiconductor component and circuit thereof.

18. (Withdrawn-Previously presented) A method for etching of silicon surfaces and layers in a process for the production of components in high-performance electronics comprising applying an etching medium according to claim 8 to the surface of said silicon or a layer in a process for the production of a component in high-performance electronics.

19. (Previously presented) A process according to claim 8, wherein said solvent is from 15 to 85% by weight based on the total amount of the medium.

20. (Previously presented) A process according to claim 8, wherein said carboxylic acid ester is [2,2-butoxy(ethoxy)]ethyl acetate or propylene carbonate.

21. (Previously presented) A process according to claim 2, wherein said additive is an antifoaming agent, a flow-control agent, a deaerator or an adhesion promoter.
22. **(Currently amended)** A process according to claim 8 16, wherein said ~~organic or inorganic base~~ etching component has a concentration of from 10-45 % by weight, based on the total amount.
23. (Previously presented) A process according to claim 6, wherein said thickener is from 1 to 10% by weight, based on the total amount of the etching medium.
24. **(Currently Amended)** A process according to claim 8, wherein said etching medium comprises an ~~organic or inorganic base~~ etching component having a concentration of from 10-45 % by weight, based on the total amount of said etching medium.
25. **(Currently Amended)** A process according to claim 8, wherein said alkaline etching medium comprises an ~~organic or inorganic base~~ etching component having a concentration of from 30-40 % by weight, based on the total amount of said etching medium.
26. (Previously presented) A process according to claim 8, wherein said alkaline etching medium comprises a thickener from 0.5 to 25% by weight, based on the total amount of said etching medium.
27. (Previously presented) A process according to claim 24, wherein said etching medium comprises
- a. 15 to 85% by weight of at least one solvent
 - b. from 0.5 to 25% by weight of a thickener and optionally
 - c. additives

and wherein said medium forms a paste that is activated by the input of energy, and said etching paste is printable.

28. (Previously presented) A process according to claim 10, wherein said source of heat is and IR lamp or a hotplate.

29. (New) A process for the selective etching of silicon surfaces and layers to a depth of 1-3 μm , comprising applying a printable thickened, alkaline liquid etching medium over the entire surface area of said surface or layer or in accordance with an etch structure mask specifically only to the areas of the surface where etching is desired

activating said medium by exposing to temperatures of from 70 to 150°C

and removing said medium after an exposure time of from 30 s to 5min

and wherein said etching medium comprises

(a) an etching component that is sodium hydroxide, potassium hydroxide, ammonia, ethanolamine, ethylenediamine, tetraalkylammonium hydroxide or one of the ethylenediamine/ pyrocatechol or ethanolamine/gallic acid mixtures having a concentration of from 10 to 45% by weight, based on the total amount of said etching medium

and

(b) from 15-85 % by weight, based on the total amount of said etching medium, of a solvent which is a mixture of water and at least one other solvent that is diethylene glycol, dipropylene glycol, polyethylene glycols, 1,2-propanediol, 1,4-butanediol, 1,3-butanediol, glycerol, 1,5 pentanediol, 2-ethyl-1-hexanol, acetophenone, methyl-2-hexanone, 2-octanone, 4-hydroxy-4-methyl-2-pentanone, 1-methyl-2-pyrrolidone, ethylene glycol monobutyl ether, ethylene glycol monomethyl ether, triethylene glycol monomethyl ether, diethylene glycol monobutyl ether, dipropylene glycol monomethyl ether, or a carboxylic acid ester

c) from 1-10% by weight of a thickener which is hydroxyalkylguar, xanthan gum, and/or ethyl hydroxypropyl or hydroxyethylcellulose, sodium

carboxymethylhydroxyethylcellulose, homopolymers or copolymers based on functionalised vinyl units of acrylic acid, acrylates or alkyl methacrylates (C₁₀-C₃₀), individually or in a mixture

wherein said etching medium selectively etches said silicon surface or layer to a depth of 1-3 µm.

30. **(New)** A process according to claim 29 wherein said etching medium comprises

- a) from 30 to 40% by weight of an etching component, based on the total amount of said etching medium
- b) from 55-75 % by weight of a solvent mixture
- c) from 1.5 to 6 % by weight of a thickener that is a sodium carboxymethylhydroxyethylcellulose and/or a crosslinked acrylic acid homopolymer.